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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/731,043

12/08/2003

Jyh Chain Lin

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25859

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04/04/2005

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EXAMINER

HAN, JASON

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action SummaryApplication No. ☒

10/731,043

Applicant(s)

LIN, JYH CHAIN

Examiner

Jason M. Han

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/8/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The abstract of the disclosure is objected to because "The light source group includes at least a light sources" is not grammatically correct. Correction is required. See MPEP § 608.01(b).

Claim Objections

3. Claim 1 is objected to because of the following informalities: Applicant recites "the light source group" in line 7 of the claim. There is insufficient antecedent basis for this limitation within the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 5, 7, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Nierenberg et al. (U.S. Patent 2646637).
5. With regards to Claim 1, Nierenberg discloses a backlight module including:
 - A light source [Figure 3: (13)]; and

- A light guide plate [Figure 3: (10, 11)] having a light input surface [Figure 3; Column 2, Lines 48-50] for receiving light and a light output surface [Column 3, Line 73 – Column 4, Line 3] for emitting light;
 - Wherein the light source faces the light input surface [Figure 3]; and
 - Wherein the light input surface is concave, and has a curvature matching a distribution of light of the light source [Figure 3; Column 2, Lines 48-50].
6. With regards to Claim 2, Nierenberg discloses the light guide plate being generally parallelepiped-shaped [Figure 3: (10, 11), when defined as an integral, composite block [Column 3, Line 73 – Column 4, Line 3].
7. With regards to Claim 3, Nierenberg discloses the light guide plate being generally wedge-shaped [Figure 3: (10)].
8. With regards to Claim 5, Nierenberg discloses the light source being a linear light source [Figure 3: (13)].
9. With regards to Claim 7, Nierenberg discloses the light input surface being cylindrically concave [Figure 3; Column 2, Lines 48-50].
10. With regards to Claim 11, Nierenberg discloses the light input surface adjoining the light output surface [Figure 3; Column 3, Line 63 – Column 4, Line 3].
11. Claims 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Nierenberg et al. (U.S. Patent 2646637).
12. With regards to Claim 15, Nierenberg discloses a light module including:

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- A light guide plate [Figure 3: (10, 11)] defining a light input surface [Figure 3; Column 2, Lines 48-50] for receiving light, whereby the light input surface essentially extends in a direction longitudinally;
- A light source [Figure 3: (13)] including a plurality of spaced light sub-sources generally arranged along said direction;
- Wherein at least one of said light input surface and a dispersion manner of said plurality of spaced light sub-sources is configured to be in a form of concave [Figure 3; Column 2, Lines 48-50].

13. With regards to Claim 16, Nierenberg discloses the light input surface being in the form of a concave [Figure 3; Column 2, Lines 48-50].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nierenberg et al. (U.S. Patent 2646637) as applied to Claim 1 above, and further in view of Ehara et al. (U.S. Patent 6601962).

15. With regards to Claim 4, Nierenberg discloses the claimed invention as cited above, but does not specifically teach light source including a group of point light sources.

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Ehara teaches a surface light emitting device including a light guide plate [Figures 15-16: (501) with light emitting diodes arranged therein [Figures 15-16: (505a); Column 11, Lines 24-27].

It would have been obvious to one ordinarily skilled in the art at the time the invention was made to modify the backlight module of Nierenberg to incorporate the point light sources of Ehara, because of the commonly known benefits associated with light emitting diodes (i.e., long life, durability, efficiency, low power consumption, and lambertian/batwing/side emitting radiation patterns). Such a configuration is considered an obvious matter of design choice.

16. With regards to Claim 6, Nierenberg in view of Ehara discloses the claimed invention as cited above. In addition, Ehara teaches light input surfaces being spherically concave [Figure 16: (505a)].

17. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nierenberg et al. (U.S. Patent 2646637).

Nierenberg discloses the claimed invention as cited above, but does not specifically teach the light input surface being disposed opposite the light output surface. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the input surface opposite the output surface, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japiske*, 86 USPQ 70. In this case, it is an obvious matter of design choice to rearrange the input surface adjoining/opposite of the output surface in order to provide a desired illumination or optical effect. Applicant corroborates, "It is

also to be generally understood that even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description, together with details of the structure and function of the invention, the disclosure is illustrative only, and changes may be made in detail, especially in matters of shape, size, and rearrangement of parts within principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed [Page 7, Paragraph 26, underline added by examiner].”

18. Claims 9-10 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nierenberg et al. (U.S. Patent 2646637) as applied to Claims 8 and 11, respectively above, and further in view of Hirakata (U.S. Patent 6191833).

19. With regard to Claims 9 and 12, Nierenberg discloses the claimed invention as cited above, but does not specifically teach a diffusing plate disposed on the light guide plate and a brightness enhancing film disposed on the diffusing plate.

Hirakata teaches a brightness enhancing film [Figure 14: (PRS)] being disposed on a diffusing plate [Figure 14: (SPS)], which is disposed on a light guide plate [Figure 14: (GLB)]. It should be further noted that Hirakata teaches, “A method has been employed for using the above-noted prism sheet or sheets to increase the brightness or luminance intensity by collection of those rays of incident light diagonally traveling with respect to the liquid crystal panel toward a front face side. Another method is also known which makes use of a recently developed optical film (such as for example “D-BEF” filmTM as manufactured by SUMITOMO-3M Company) as designed to let output light of a light source have polarization characteristics for permitting penetration of only

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specific rays of the polarized light for re-use purposes while causing the remaining rays to be reflected off [Column 4, Lines 1-12; underline added by examiner].”

It would have been obvious to one ordinarily skilled in the art at the time the invention was made to modify the backlight module of Nierenberg to incorporate the diffusing plate and brightness enhancing film of Hirakata in order to provide a more uniform and bright illumination.

20. With regard to Claims 10 and 14, Nierenberg in view of Hirakata discloses the claimed invention as cited above. In addition, Hirakata teaches the brightness enhancing film being a prism plate (see preceding paragraphs).

21. With regards to Claim 13, Nierenberg in view of Hirakata discloses the claimed invention as cited above. Nierenberg does not specifically teach a reflecting plate, however, Hirakata teaches such a reflecting plate [Figure 14: (RFS)] disposed under the light guide plate. It would have been obvious to one ordinarily skilled in the art at the time the invention was made to modify the backlight module of Nierenberg to further incorporate the reflecting plate of Hirakata to improve efficiency and/or provide a desired optical effect with the illumination of the system. Such reflectors are commonly known within the art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are cited to further show the state of the art pertinent to the current application, but are not considered exhaustive:


US Patent 3740540 to Takeichi et al;	Japanese Patent JP04329519A to Obata;
US Patent 6065845 to Miyazaki;	US Patent 6139163 to Satoh et al;
US Patent 6250767 to Kusafuka et al;	US Patent 6283602 to Kawaguchi et al;
US Publication 2002/0181222 to Boyd et al;	US Patent 6561660 to Huang;
US Patent 6669350 to Yamashita et al;	US Patent 6808279 to Greiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Han whose telephone number is (571) 272-2207. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMH (3/21/2005)


Stephen Husar
Primary Examiner